National Chronic Kidney Disease Fact Sheet 2010

Chronic kidney disease (CKD) is a condition in which the kidneys are damaged and cannot filter blood as well as possible. This damage can cause wastes to build up in the body and lead to other health problems, including cardiovascular disease (CVD), anemia, and bone disease. People with early CKD tend not to feel any symptoms. The only ways to detect CKD are through a blood test to estimate kidney function, and a urine test to assess kidney damage. CKD is usually an irreversible and progressive disease and can lead to kidney failure, also called End Stage Renal Disease (ESRD), over time if it is not treated. Once detected, CKD can be treated through medication and lifestyle changes to slow down the disease progression, and to prevent or delay the onset of kidney failure. However, the only treatment options for kidney failure are dialysis or a kidney transplant.

CKD is common among adults in the United States.

More than 10% of people, or more than 20 million, aged 20 years or older in the United States have CKD.

- CKD is more common among women than men.
- More than 35% of people aged 20 years or older with diabetes have CKD.
- More than 20% of people aged 20 years or older with hypertension have CKD.

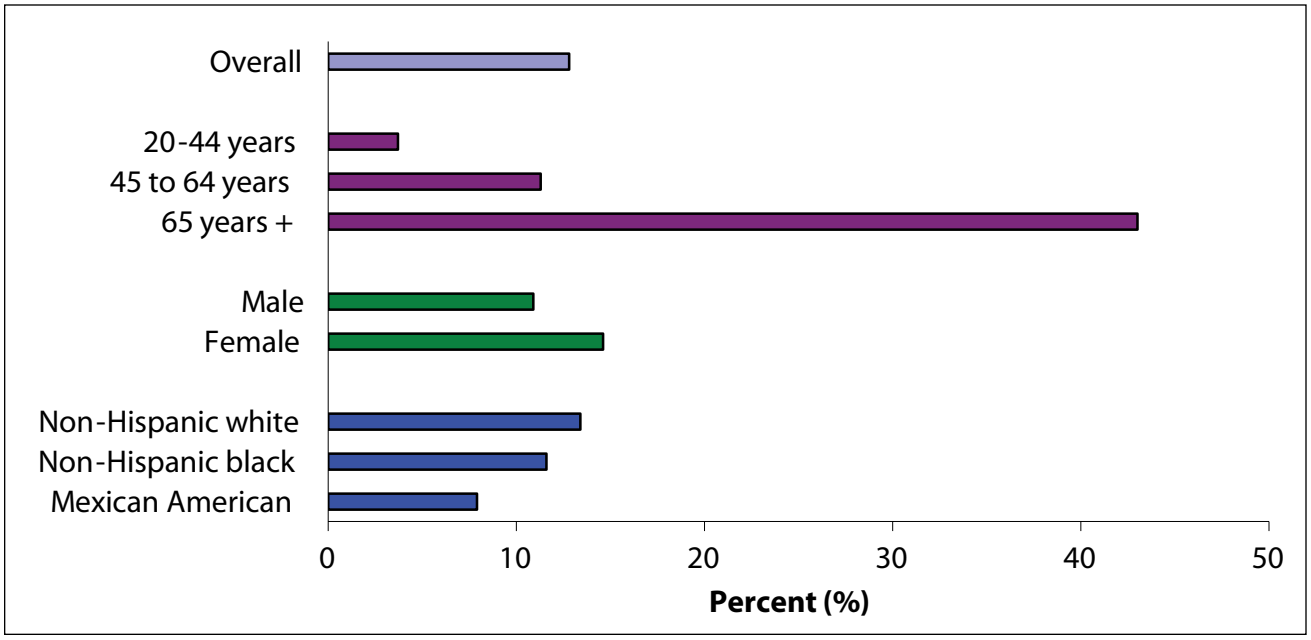

Figure legend: Percent with CKD among adult U.S. population by age, sex, and race/ethnicity.

Risk factors for development of CKD

Adults with diabetes or hypertension are at an increased risk of developing CKD. Other risk factors for developing CKD include CVD, obesity, elevated cholesterol, and a family history of CKD. The risk of developing CKD increases with age largely because risk factors for kidney disease become more common as one ages.

Risk factors for progression of CKD

Inadequately controlled diabetes and hypertension increase the risk of progression of CKD to kidney failure. Repeated episodes of acute kidney injury from a variety of causes (e.g., infections, drugs, or toxins injurious to the kidney) can also contribute to progression of CKD to kidney failure, especially in the elderly. While CKD is more common among women, men with CKD are 50% more likely than women to progress to kidney failure.

Important health consequences of CKD

Cardiovascular disease

CKD is an important risk factor for cardiovascular disease, including heart attacks, heart failure, heart rhythm disturbances, and strokes. Risk factors for cardiovascular disease that require careful attention in people with CKD include tobacco use, uncontrolled high blood pressure, elevated blood sugar, excessive weight, and elevated cholesterol.

Kidney failure

Kidney failure or ESRD occurs when the kidneys are no longer able to provide waste removal functions for the body. At this point, dialysis or kidney transplantation becomes necessary for survival.

- About 110,000 patients in the United States started treatment for ESRD in 2007.
- Leading causes of ESRD are diabetes and hypertension. In 2006, 7 out of 10 new cases of ESRD in the United States had diabetes or hypertension listed as the primary cause. Less common causes include glomerulonephritis, hereditary kidney disease, and malignancies such as myeloma.
- Incidence of ESRD is greater among adults older than 65 years.
- African Americans were nearly four times more likely to develop ESRD than whites in 2007. However, this disparity in ESRD incidence has narrowed from 1998 to 2005.
- Hispanics have 1.5 times the rate of kidney failure compared to non-Hispanic whites.
- Between 2000 and 2007, the adjusted incidence of ESRD due to diabetes has increased by less than 1% and the adjusted incidence of glomerulonephritis has fallen by 21%, suggesting possible improvement in the clinical management of this condition. In contrast, the adjusted incidence of ESRD due to hypertension has increased by 8% between 2000 and 2007.

Deaths

Premature death from both cardiovascular disease and from all causes is higher in adults with CKD compared to adults without CKD. In fact, individuals with CKD are 16 to 40 times more likely to die than to reach ESRD.

Other health consequences

The kidneys have many functional roles, including fluid and electrolyte balance, waste removal, acid-base balance, bone health, and stimulation of red blood cell production. CKD can be associated with fluid overload, sodium and potassium imbalances, bone and mineral disorders, anemia, and reduced quality of life. Additionally, adults with CKD typically have other chronic diseases, such as diabetes, hypertension, and other cardiovascular diseases.

What can be done to reduce the burden of CKD and prevent or delay kidney failure?

The federal and state government and various national organizations have developed comprehensive strategies to address the burden of kidney disease in the United States. The most efficient way to reduce the burden of CKD is to prevent and treat its risk factors. Screening individuals at high risk for CKD (e.g., people older than 50 years; people with a history of diabetes mellitus, hypertension, cardiovascular disease; or people who have a family history of CKD) may prevent or delay kidney failure. Screening demonstration projects are currently ongoing to evaluate the effectiveness. Therapeutic treatments can slow progression of kidney disease as well as manage its complications. Timely referral to a nephrologist (kidney doctor) and getting treatment also improves outcomes.

Acknowledgments

The following organizations collaborated in compiling the information for this fact sheet:

- Agency for Healthcare Research and Quality
  http://www.ahrq.gov/
- Centers for Disease Control and Prevention
  http://www.cdc.gov/diabetes
- Centers for Medicare and Medicaid Services
  http://www.cms.hhs.gov
- U.S. Department of Veterans Affairs
  http://www.va.gov/health/
- Health Resources and Services Administration
  http://www.hrsa.gov
- Kidney Disease Interagency Coordinating Committee
  http://nkdep.nih.gov/about/kicc/index.htm
- National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health
  http://www.niddk.nih.gov
- National Kidney Disease Education Program
  http://www.nkdep.nih.gov/
- National Heart Lung and Blood Institute of the National Institutes of Health
  http://www.nhlbi.nih.gov/
- American Society of Nephrology
  http://www.asn-online.org/
- National Kidney Foundation
  http://www.kidney.org/
- United States Renal Data System (USRDS)
  http://www.usrds.org/
- The University of Michigan Kidney Epidemiology and Cost Center (UM-KECC)
  http://www.sph.umich.edu/kecc/
- University of California, San Francisco and University of California, San Francisco Center for Vulnerable Populations
  http://www.ucsf.edu/
  http://www.cvp-sf.com/

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Note

Citation

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